

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS Wanh, L.

FOR: PRENATAL SCREENING

March 10, 2004
Boston, MA 02111

Mail Stop Patent Application

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT AND ACCOMPANYING
FORM PTO-1449**

Applicants submit herewith copies of modified PTO-1449 forms submitted in parent application USSN 09/226,766 from which the presently filed application claims priority. Copies of the references listed therein are not enclosed but will be provided upon request. Applicants request that each of the listed documents be made of record in the presently filed application.

This information disclosure statement is being submitted concurrently with the filing of the application. Accordingly, no fee is believed due. However, the Commissioner is authorized to charge any fees due, or credit overpayments of same, to Deposit Account No. 50-0311, Ref. No.21578-010CON.

Respectfully submitted,



Ingrid A. Beattie, Reg. No. 42,306
Attorneys for Applicants
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Boston, Massachusetts 02111
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Dated: March 10, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Lawrence J. Wangh
Serial No.: 09/226,766
Filed : January 6, 1999
Title : PRENATAL SCREENING

Art Unit:
Examiner:

Assistant Commissioner for Patents
Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO 1449. A copy of the international search report from counterpart international application PCT/US94/00978 (international publication number WO 94/18344) is also enclosed.

Under 35 USC 120, this application relies on the earlier filing date of copending Application Serial No. 09/050,380, filed March 30, 1998, which is a continuation of Application Serial Number 08/455,981, filed on May 31, 1995 (Patent Number 5,773,217), which is a divisional of U.S. Application Serial No. 08/190,771 (Patent No. 5,651,992), filed February 1, 1994 which is a continuation-in-part of U.S. Application Serial No. 13,039 (Patent Number 5,480,772), filed February 3, 1993. Copies of newly-cited patents and applications AF-AH, AL-AP, BL-BO, and publications US, VQ-VS, WQ-WS, XQ-XS, YO-YR, and ZQ-ZS, generally relating to cloning are submitted. All other references were submitted to and/or cited by the Office

Date of Deposit

April 8, 1999

I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Paula T. Romeo

in the prior applications and, therefore, copies are not provided in this application.

This statement is being filed before the receipt of a first Office action on the merits. Please apply any charges or credits to Deposit Account 06-1050.

Respectfully submitted,

Date:

4/8/99

Stuart Macphail
Stuart Macphail, Ph.D.
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New York, NY 10111

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SUBSTITUTE FORM PTO-1449 (MODIFIED)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 08609/003004		SERIAL NO. 09/226,766							
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))				APPLICANT Lawrence J. Wangh									
				FILING DATE January 6, 1999		GROUP							
U.S. PATENT DOCUMENTS													
EXAMINER INITIAL		PATENT NUMBER						ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	AA	4	7	2	2	5	9	8	02/02/88	Ford	359	398	
	AB	4	8	6	5	8	1	2	09/12/89	Kuntz et al.	422	99	
	AC	4	8	7	3	1	9	1	10/10/89	Wagner et al.	435	172,3	
	AD	5	3	5	8	8	4	7	10/25/94	Brown	435	6	
	AE	5	4	9	6	7	2	0	03/1996	Susko-Parrish et al.	435	240.2	
	AF	4	9	9	4	3	8	4	02/19/91	Prather et al.	435	172.2	
	AG	5	2	1	3	9	7	9	05/25/93	First et al.	435	240.2	
	AH	5	0	5	7	4	2	0	10/15/91	Massey	435	172.2	
	AI												
	AJ												
	AK												
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION													
		DOCUMENT NUMBER						PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO	
	AL	2,092,258						07/01/94	Canada				
	AM	0 559 307						09/08/93	EP				
	AN	WO 95/17500						06/29/95	PCT				
	AO	WO 95/16770						06/22/95	PCT				
	AP	WO 97/07669						03/06/97	PCT				
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)													
	AQ	Bianchi et al., "Isolation of Fetal DNA From Nucleated Erythrocytes In Maternal Blood," Proc. Natl. Acad. Sci. USA 87:3279-3283 (1990)											
	AR	Brown et al., "Chromatin Decondensation And DNA Synthesis In Human Sperm Activated In Vitro By Using Xenopus Laevis Egg Extracts," J. Exp. Zool. 242:215-231 (1987)											
	AS	Brown et al., J. Cell Biology 111:2839 (1990)											
EXAMINER									DATE CONSIDERED				
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.													

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		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO
	BL	WO 98/07841	02/26/98	PCT			
	BM	WO 97/37009	10/09/97	PCT			
	BN	WO 98/27214	06/25/98	PCT			
	BO	WO 97/07668	03/06/97	PCT			
	BP						
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	BQ	Brown et al., "Partial Purification of Xenopus Laevis Egg Extract Factor(s) That Induce Swelling In Permeabilized Human Sperm," J. Exp. Zool. 258:263-272 (1991)					
	BR	Brown et al., "Use of Xenopus Laevis Frog Egg Extract In Diagnosing Human Male Unexplained Infertility," Yale J. Biol. Med. 65:29-38 (1992)					
	BS	Coppock et al., "Replication of Xenopus Erythrocyte Nuclei In A Homologous Egg Extract Requires Prior Proteolytic Treatment," Development Biology 131:102-110 (1989)					
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STATEMENT BY APPLICANT
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Lawrence J. WanghFILING DATE
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GROUP

(37 CFR 1.98(b))

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER	ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
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							YES	NO
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	CP							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	CQ	Dawson et al., "Data For Biochemical Research," Second Edition, Oxford University Press, Oxford,
		pp. 388-389 (1969)
	CR	Gordon et al., Exp. Cell Res. 157:409 (1985)
	CS	Graham, "The Regulation of DNA Synthesis And Mitosis In Multinucleate Frog Eggs," J. Cell Sci.
		1:363-374 (1966)

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	DL						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	DQ	Griveau et al, "Decondensation of Human Sperm Nuclei And HP1 Protamine Degradation From Normospermia And Asthenospermia In Xenopus Egg Extracts," Arch. Androl. 29:127-136 (1992)					
	DR	Jackson, "The Future In Prenatal Diagnosis," Seminars in Perinatology 15:49-51 (1991)					
	DS	Leno et al., "The Nuclear Membrane Determines The Timing of DNA Replication In Xenopus Egg Extracts," J. Cell Biology Vol. 112 No. 4 pp. 557-566 (1991)					
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DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
					YES	NO
EL						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

EQ	Lohka et al., "Formation In Vitro of Sperm Pronuclei And Mitotic Chromosomes Induced By Amphibian Ooplasmic Components," Science 220:719-721 (1983)
ER	Masui, "Hormonal And Cytoplasmic Control of The Maturation of Frog Oocytes," Ontogenez Vol. 3 No. 6 pp. 574-587 (1972)
ES	Masui et al., "Roles of Ca Ions And Ooplasmic Factors In The Resumption of Metaphase-Arrested Meiosis In Rana Pipiens Oocytes," Symp. Soc. Exp. Biol. 38:45-66 (1984)

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		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO
	FL						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	FQ	Meyerhof et al., "Chromosome Condensation Activity In Rana Pipiens Eggs Matured In Vivo And In Blastomeres Arrested By Cytostatic Factor (CSF)," Exp. Cell Res. 123:345-353 (1979)					
	FR	Montag et al., "In Vitro Decondensation of Mammalian Sperm And Subsequent Formation of Pronuclei-Like Structures For Micromanipulation," Mol. Reprod. Devel. 33:338-346 (1992)					
	FS	Ohsumi et al., "Development of Pronuclei From Human Spermatozoa Injected Microsurgically Into Frog (Xenopus) Eggs," J. Exp. Zool. 237:319-325 (1986)					
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							YES	NO
	GL							
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	GQ	Ohsumi et al., "Human Sperm Nuclei Can Transform Into Condensed Chromosomes In Xenopus Egg Extracts,"
		Gamete Res. 20:1-9 (1988)
	GR	Riabova et al., "A Contribution To The Chronology of Embryogenesis In The Common Frog," Ontogenez
		15:93-97 (1984)
	GS	Roberts, FISHing Cuts The Angst In Amniocentesis," Science 254:378-379 (1991)

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	HL						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	HQ	Zirkin et al., "In Vitro And In Vivo Studies of Mammalian Sperm Nuclear Decondensation," Gamete Research					
		11:349-365 (1985)					
	HR						
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	IL						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	IQ	Adachi et al., "Identification of Nuclear Pre-Replication Centers Poised For DNA Synthesis In Xenopus Egg					
		Extracts: Immunolocalization Study of Replication Protein A," J. Cell Biology Vol. 119 No. 1 pp. 1-15 (1992)					
	IR	Almouzni et al., "Xenopus Egg Extracts: A Model System For Chromatin Replication," Biochimica et Biophysica					
		Acta, 951:443-450 (1988)					
	IS	Almouzni et al., "Assembly of Spaced Chromatin Promoted By DNA Synthesis In Extracts From Xenopus Eggs,"					
		The EMBO Journal Vol. 7 No. 3 pp. 665-672 (1988)					
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FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO
	JL						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	JQ	Almouzni et al., "Competition Between Transcription Complex Assembly And Chromatin Assembly On Replicating DNA," EMBO Journal Vol. 9 No. 2 pp. 573-582 (1990)					
	JR	Almouzni et al., "Nuclear Assembly, Structure, and Function: The Use of Xenopus In Vitro Systems," Exp. Cell Res. 205:1-15 (1993)					
	JS	Blow et al., "Initiation of DNA Replication In Nuclei And purified DNA By A Cell-Free Extract of Xenopus Eggs," Cell 47:577-587 (1986)					
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							YES	NO
	KL							
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	KQ	Blow et al., "Nuclei Act As Independent And Integrated Units of Replication in A Xenopus Cell-Free DNA Replication System," EMBO Journal Vol. 6 No. 7 pp. 1997-2002 (1987)
	KR	Blow et al., "A Role For The Nuclear Envelope In Controlling DNA Replication Within The Cell Cycle," Nature Vol. 332 No. 7 pp. 546-548 (1988)
	KS	Blow et al., "Replication of Purified DNA In Xenopus Egg Extracts Is Dependent on Nuclear Assembly," J. Cell Science 95:383-391 (1990)

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							YES	NO
	LL							
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	LQ	Blow et al., "A CDC2-Like Protein Is Involved In The Initiation of DNA Replication In Xenopus Egg Extracts,"
		Cell 62:855-862 (1990)
	LR	Blow, "Preventing Re-Replication of DNA In A Single Cell Cycle: Evidence For A Replication Licensing
		Factor," J. Cell Biology Vol. 122 No. 5 pp. 993-1002 (1993)
	LS	Coverley et al., "Reversible Effects of Nuclear Membrane Permeabilization on DNA Replication: Evidence For
		A Positive Licensing Factor," J. Cell Biology Vol. 122 No. 5 pp. 985-992 (1993)

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		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO
	ML						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	MQ	Coverley et al., "Regulation of Eukaryotic DNA Replication," Annu. Rev. Biochem. 63:745-76 (1994)					
	MR	Cox et al., "Extracts From Eggs And Oocytes of Xenopus Laevis Differ In Their Capacities For Nuclear Assembly And DNA Replication," J. Cell Science 97:177-184 (1990)					
	MS	Cox, "DNA Replication In Cell-Free Extracts From Xenopus Eggs Is Prevented By Disrupting Nuclear Envelope Function," J. Cell Science 101:43-53 (1992)					
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FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION							
	DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
NL							
NM							
NN							
NO							
NP							
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	NQ	Hirano et al., "Topoisomerase II Does Not Play A Scaffolding Role In The Organization of Mitotic Chromosomes					
		Assembled In Xenopus Egg Extracts," J. Cell Biology Vol. 120 No. 3 pp. 601-612 (1993)					
	NR	Hutchison et al., "Periodic DNA Synthesis In Cell-Free Extracts of Xenopus Eggs," EMBO Journal					
		6:2003-2010 (1987)					
	NS	Hutchison et al., "The Control of DNA Replication In A Cell-Free Extract That Recapitulates A Basis Cell					
		Cycle In Vitro," Development 103:553-566 (1998)					
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PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
08609/003004SERIAL NO.
09/226,766INFORMATION DISCLOSURE
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U.S. PATENT DOCUMENTS

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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	OQ	Hutchison et al., "DNA Replication And Cell Cycle Control In Xenopus Egg Extracts," J. Cell Sci. Suppl.
		12:197-212 (1989)
	OR	Hutchison et al., "Changes In The Nuclear Distribution of DNA Polymerase Alpha And PCNA/Cyclin During The Progress of The Cell Cycle, In A Cell-Free Extract of Xenopus Eggs," J. Cell Sci. 93:605-613 (1989)
	OS	Hyrien et al., "Plasmid Replication In Xenopus Eggs And Egg Extracts: A 2D Gell Electrophoretic Analysis," Nucleic Acids Research Vol. 20 No. 7 pp. 1463-1469 (1992)

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							YES	NO
	PL							
	PM							
	PN							
	PO							
	PP							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	PQ	Hyrien et al., "Chromosomal Replication Initiates And Terminates At Random Sequences But At Regular Intervals
		In The Ribosomal DNA of Xenopus Early Embryos," EMBO Journal Vol. 12 No. 12 pp. 4511-4520 (1993)
	PR	Kornbluth et al., "In Vitro Cell Cycle Arrest Induced By Using Artificial DNA Templates," Molecular and
		Cellular Biology Vol. 12 No. 7 pp. 3216-3223 (1992)
	PS	Leno et al., "The Nuclear Membrane Prevents Replication of Human G2 Nuclei But Not G1 Nuclei In Xenopus Egg
		Extract," Cell 69:151-158 (1992)

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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	QQ						
	QR	Lohka et al., "Roles of Cytosol And Cytoplasmic Particles In Nuclear Envelope Assembly And Sperm Pronuclear Formation In Cell-Free Preparations From Amphibian Eggs," J. Cell Biology 98:1222-1230 (1984)					
	QS	Mahbubani et al., "DNA Replication Initiates At Multiple Sites On Plasmid DNA In Xenopus Egg Extracts," Nucleic Acids Research Vol. 20 No. 7 1457-1462 (1992)					
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	RM						
	RN						
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	RP						
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	RQ	Meier et al., "The Role of Lamin LIII In Nuclear Assembly And DNA Replication, In Cell-Free Extracts of Xenopus Eggs," J. Cell Science 98:271-279 (1991)					
	RR	Mills et al., "Replication Occurs At Discrete Foci Spaced Throughout Nuclei Replicating In Vitro," J. Cell Science 94:471-477 (1989)					
	RS	Murray et al., "Cyclin Synthesis Drives The Early Embryonic Cell Cycle," Nature 339:275-280 (1989)					
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	SM						
	SN						
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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	SQ	Newport, "Nuclear Reconstitution In Vitro: Stages of Assembly Around Protein-Free DNA,"					
		Cell 48:205-217 (1987)					
	SR	Ohsumi et al., "Chromosome Condensation In Xenopus Mitotic Extracts Without Histone H1," Science					
		262:2033-2035 (1993)					
	SS	Pardee, "G ₁ Events And Regulation of Cell Proliferation," Science Vol. 246 No. 4930 pp. 603-640 (1989)					
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	TL							
	TM							
	TN							
	TO							
	TP							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	TQ	Philpott et al., "Sperm Decondensation In Xenopus Egg Cytoplasm Is Mediated By Nucleoplasmic," Cell 65:569-578 (1991)
	TR	Philpott et al., "Nucleoplasmic Remodels Sperm Chromatin In Xenopus Egg Extracts," Cell 69:759-767 (1992)
	TS	Sheehan et al., "Steps In The Assembly of Replication-Competent Nuclei In A Cell-Free System From Xenopus Eggs," J. Cell Biology 106:1-12 (1988)

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OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	UQ	Sleeman et al., "Patterns of DNA Replication In Drosophila Polytene Nuclei Replicating In Xenopus Egg And Oocyte Extracts," J. Cell Science 101:509-515 (1992)					
	UR	Smythe et al., "Coupling of Mitosis To The Completion of S Phase In Xenopus Occurs Via Modulation of The Tyrosine Kinase That Phosphorylates P34 ^{cdc2} ," Cell 68:787-797 (1992)					
	US	Brown et al., "In vitro activation of human sperm nuclei using Xenopus laevis egg extract," Abstract #1461 in J. Cell Biology 99:396a, 1984.					
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							YES	NO
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	VM							
	VN							
	VO							
	VP							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	VQ	Campbell et al., "Sheep Cloned by Nuclear Transfer from a Cultured Cell Line," Nature 380: 64-66 (1996).
	VR	Chan et al., "Transgenic cattle produced by reverse-transcribed gene transfer in oocytes," Proc. Natl. Acad. Sci. USA 95:14028-14033, 1998.
	VS	Cibelli et al., "Cloned Transgenic Calves Produced from Nonquiescent Fetal Fibroblasts,"
		Science 280:1256-1258, 1998

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		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	WL							
	WM							
	WN							
	WO							
	WP							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	WQ	DiBerardino, M.A., GENOMIC POTENTIAL OF DIFFERENTIATED CELLS, Columbia Univ. Press (New York, 1997), chapters 5-7
	WR	DiBerardino et al., "Feeding tadpoles cloned from Rana erythrocyte nuclei," Proc. Natl. Acad. Sci. USA 83:8231-8234, 1986
	WS	Dimitrov et al., "Remodeling Somatic Nuclei in Xenopus Laevis Egg Extracts: Molecular Mechanisms for . . . transcriptional competence," The EMBO Journal 15 (21):5897-5906, 1996.

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	XL						
	XM						
	XN						
	XO						
	XP						
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	XQ	Gurdon, "Nuclear Transplantation in Eggs and Oocytes," J. Cell Sci. Suppl. 4:287-318, 1986.					
	XR	Kato et al., "Eight Calves Cloned from Somatic Cells of a Single Adult," Science 282:2095-2098, 1998.					
	XS	Kwon et al., "Production of Identical Sextuplet Mice by Transferring Metaphase Nuclei from Four-Cell Embryos," PNAS (USA) 93:13010-13013, 1996					
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	YJ							
	YK							
	YL							
	YM							
	YN							

OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

	YO	Newport et al., "Disassembly of the Nucleus in Mitotic Extracts: Membrane Vesicularization, Lamin Disassembly and Chromosome Condensation Are Independent Processes," Cell 48:219-230, 1987
	YP	Normile, "Bid for Better Beef Gives Japan a Leg Up on Cattle," Science 282:1975-1976, 1998
	YQ	Orr et al., "The genome of frog erythrocytes displays centuplicate replications," Proc. Natl. Acad. Sci. USA 83:1369-1373, 1986
	YR	Schnieke et al., "Human Factor IX Transgenic Sheep Produced by Transfer of Nuclei from Transfected Fetal Fibroblasts," Science 278:2130-2133, 1997

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	ZP						
OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)							
	ZQ	Wakayama et al., "Full-term development of mice from enucleated oocytes injected with cumulus cell nuclei," Letter to Nature, Nature 394:369, 1998					
	ZR	Wangh, "Injection of Xenopus eggs before activation, achieved by control of extracellular factors, improves plasmid DNA replication after activation," J. of Cell Science 93:1-8, 1989.					
	ZS	Wilmut et al., "Viable Offspring Derived from Fetal and Adult Mammalian Cells," Nature 385:810-813 (1997)					
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